

December 15, 2014

To: Resource Recovery Project Board

From: Joint Staff Committee

Re: Peer Review of Meeting a 75% Recycling Goal by 2030

In September 2014, a team of county staff and consultants completed an analysis of the Ramsey/ Washington solid waste system for purposes of determining how to achieve to meet the new State 75% recycling goal by 2030.

The waste system analysis included:

1. A composition study of both residential and non-residential wastes delivered to the Newport Resource Recovery Facility.
2. Projected waste recovery rates with improved source separated recycling (SSR)/ source separated organics (SSO) programs for both residential and non-residential generators.
3. Development of a mixed waste processing (MWP) system at the Newport Resource Recovery Facility and its projected recovery rates for cardboard, plastic containers, and organic materials (Aluminum and steel, are currently recovered by RRT during waste processing will be recovered prior to current RDF processing.)
4. Projected recovery rates for implementation of a MWP system at the Newport Resource Recovery Facility combined with improved SSR/ SSO programs.

In sum, the report found that achieving a 75% recycling rate will be challenging or not possible, considering the materials currently recyclable, technology that exists today, and markets as they currently exist for recyclables. That means, to achieve a 75% recycling rate, over the next 15 years the recyclability of materials, technology to separate those materials, and places to market them needs to dramatically change. It is important to note that, using current metropolitan waste volumes, a 75% goal means that an additional 800,000 tons of recyclable material needs to be separated, processed and marketed each year from the region.

The key findings from the RRP analysis were:

1. Meeting a 75% recovery rate by 2030 will be difficult and aggressive.
2. Residential waste makes up approximately 45% of the total municipal solid waste (MSW) stream with commercial wastes comprising the remaining 55%.
3. Compostable organics, including food waste and compostable paper, by far present the top recyclable materials in the waste stream, followed by cardboard.

4. Some waste categories, such as treated wood and composite plastics, are not currently recyclable due to a lack of readily available end markets.
5. Aggressive increases in the collection of materials from Source Separated Organics and Recycling (SSO/SSR) programs from residents and commercial sectors could raise our recycling rates by 11.2%.
6. Development of mixed waste processing (MWP) technology at Newport, when combined with enhanced SSO/SSR programs, could recover an additional 2.9% of MSW.
7. A theoretical maximum 67.1% recovery rate could be achieved given our current recycling rate of 53% (including yard waste), combined with successfully implementing new and aggressive source separated recycling and organics programs, and a mixed waste processing system targeting organic waste, cardboard, plastic containers, aluminum, and ferrous metals.
8. Market development will be needed to find ways to manage materials that are currently either not recyclable or not accepted in many curbside programs (e.g. compost from organic waste, laminated wood products, plastic film, and composite plastics).

In November 2014, the team of county staff and consultants summarized the results and findings of this analysis and submitted them to 26 public and private solid waste industry entities (Table 1, at the end of this memo) for peer review. These entities were asked to comment on the methodology and conclusions, and to offer suggestions.

Peer Review Conclusions

The process for obtaining peer review of the initial R/W “75% recycling” analysis provided valuable input for county staff and consultants. The insights, time and effort provided by those who responded have resulted in important feedback.

Overall, while not all respondents concurred with our approach for the analysis, and we recognize its limitations, it appears that the overall conclusion that a 75% recycling goal is not currently achievable, is valid. None of the peer review participants was able to offer any “better” way to predict how we could meet the 75% recycling goal; thus, the county staff and consultant feel confident in our analysis.

Peer Reviewers Feedback

Peer reviewers varied in their perspectives regarding our assumptions and key finding that meeting a 75% recycling rate by 2030 is not possible given our current MSW composition, recycling markets, and potential waste management system infrastructure.

Some reviewers agreed with our analysis as structured. Others were concerned with the result, and thought 75% could be achievable over time, with a variety of reasons cited, such as changes in markets, recycling laws, technologies, incentives, or reporting and definitions (e.g., including source reduction/reuse, C&D, or industrial waste). In particular The MPCA staff did not want to discount future advances in recycling, such as development of end markets for

additional material; thus, they sought to reframe our conclusion as, “Meeting a 75% recovery rate by 2030 will be difficult and aggressive.” Regardless of how the results are stated, however, there were few criticisms of the methodology used.

The following is a summary of input received from respondents on various aspects of the analysis:

Areas of Agreement:

- Organic materials present the biggest potential for recovery.
- Respondents supported the usefulness of the R/W waste composition study, and several agreed as well that the 45% residential/55% commercial split was reasonable.
- Multiple respondents confirmed that the assumption of a maximum over time of 30% participation/recovery of residential SSO seemed reasonable, while citing lower rates depending on how specific collection programs are structured.

Areas of Mixed Feedback:

- Some respondents agreed with our conclusion that some materials would continue to be very difficult to recover, such as treated wood and composite plastics. Others disagreed, instead citing this as an opportunity to address hard to recycle items through strategies such as extended producer responsibility (EPR), material bans, additional drop-off opportunities, and waste prevention education.
- Regarding our cost estimates, some respondents generally concurred overall, while others disagreed or offered suggestions. For example, some thought the average cost estimate of \$4,000 per business seemed reasonable, while others thought it was too high because, for example, costs might be lowered through business efficiencies. Two respondents commented about the potential for lower overall costs if businesses or residents right-sized their trash service. Depending on how a residential SSO collection program was structured (e.g., subscription vs. regular service, with or without yard waste), some respondents thought our cost estimates could be reasonable, while one respondent thought the costs could be much lower for a properly designed and implemented collection program.

Areas of Concern or Disagreement:

- Multiple respondents advocated focusing on source separation over MWP for recovering recyclable materials due to concern about the quality and corresponding marketability of recyclable material if recovered from MWP, although two existing facilities stated they are marketing the cardboard from their MWP systems.
- Recovery rates of recyclables based on waste composition should be conservatively projected at 50% of what is in the waste, not more aggressive as R/W analysis did.
- Some respondents expressed caution about using existing county SCORE report data as a baseline for analysis of commercial recycling, because current reports rely significantly on estimated quantities of recycling. Some acknowledged SCORE data is the best data

currently available, while others commented that such data should not be used for the analysis, especially with a pending change in SCORE recycling reporting by the Minnesota Pollution Control Agency (MPCA). No one, however, that criticized use of SCORE data was able to suggest an alternate way of measuring commercial recycling.

- Innovations yet-to-come might yield greater recovery rates of recyclable materials, but they are not yet developed, and so 75% recovery is very aggressive and optimistic.

Suggestions beyond the Methodology

Two reviewers offered comments that went beyond evaluating the methodology of the analysis and its conclusions, and addressed policy issues. For example:

- Suggestions to capture the amount of source reduction or reuse, and count that toward recycling (MPCA's methods for measuring recycling do not allow for this; policy and legislative changes around measurement are needed to be able to address this).
- Suggestions were made about how the region could meet at 75% recycling goal, including promoting source reduction, and requiring extended producer responsibility (product stewardship), adding disposal bans for certain materials.
- Criticism was aimed at the report, alleging that the conclusion was intended to support continued county involvement in waste processing, stating instead that funding should be directed to EPR, source reduction, and recycling development instead of waste processing.

Next Steps

No changes to our process and resulting reports are planned at this time.

Based on the original study, and the peer review, the following is considered to be the conclusion of the study:

Ramsey and Washington Counties analyzed the possibility of meeting a 75% recycling goal, with the context of the current solid waste system. The study considered methods and technology that currently exists for separation of recyclables, at the source and from MSW. It considered the current composition of MSW, and the current actual and estimated volumes of recyclables recovered. It took into account the materials currently recyclable, and markets for those materials.

The analysis found that achieving a 75% recycling rate will be challenging or not possible, considering the materials currently recyclable, technology that exists today, and markets as they currently exist for recyclables. This means that to achieve a 75% recycling rate, over the next 15 years, the recyclability of materials, technology to separate those materials, and places to market them needs to change dramatically. Public policy initiatives at the appropriate level of government, research by the appropriate institutions, and actions by the private sector: particularly the waste and recycling industry, and needed to achieve this goal.

From a policy perspective, changes are needed to address how we measure progress in managing waste, to create incentives to reduce and reuse materials, to assure that materials are separated for recycling to optimize their resource potential, and to assure that stable and reliable markets are available.

Table 1

Organizations Sought to Provide Peer Review of RWRRP Waste Systems Analysis	
Anoka, Dakota, Carver, Hennepin and Olmsted Counties	Polk County Resource Recovery, Fosston, MN
Barthold Recycling	Prairie Lakes Municipal Solid Waste Authority, Perham MN
Bulk Handling Systems, Inc. (BHS)	Randy's Sanitation, LLC
CP Group	Sanimax/SaniGreen Bioenergy
City of Edmonton, Canada Waste Management	SKB Environmental
Dem-Con Companies	Specialized Environmental Technologies (SET)
Eureka Recycling	Tennis Sanitation
Full Circle Organics, LLC	Veit Specialty Contracting and Waste Management
Great River Energy (GRE)	Waste Management, Inc
MPCA	Western Lake Superior Sanitary District (WLSSD)
Minnesota Technical Assistance Program (MN TAP)	Prairie Lakes Municipal Solid Waste Authority, Perham MN